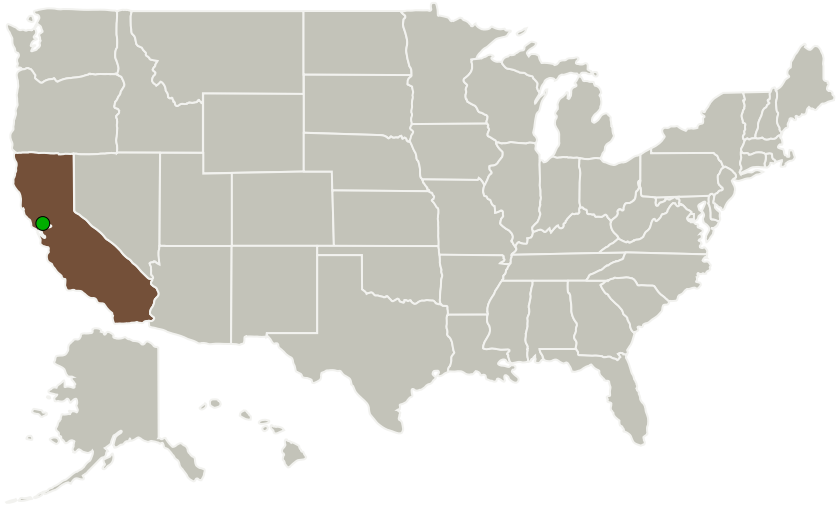
Mobile Greenhouse Gas Flux Analyzer for Unmanned Aerial Vehicles, Phase I

Completed Technology Project (2011 - 2011)

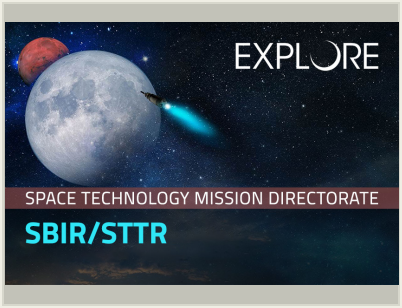
Project Introduction

In this SBIR Phase I effort, Los Gatos Research (LGR) proposes to develop a highly-accurate, lightweight, low-power gas analyzer for eddy flux covariance measurements of carbon dioxide (CO2) and water vapor (H2O) aboard unmanned aerial vehicles (UAVs). This analyzer will be the first sensor capable of meeting the stringent speed, weight, power, and environmental requirements for unmanned airborne flux measurements. Airborne eddy flux covariance measurements enable regional-scale investigations of carbon sources and sinks as well as measurements in areas where conventional tower flux deployments are infeasible. These data complement current satellite observations by providing higher horizontal resolution and vertical profiling, enabling better quantification of carbon sources and sinks. Such deployments are critically important to NASA's Earth Science Division, because they enable more efficient and cost-effective Earth observations.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Los Gatos Research	Lead Organization	Industry	Mountain View, California
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California



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Primary U.S. Work Locations
California

Project Transitions

February 2011: Project Start

September 2011: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/140200)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Los Gatos Research

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

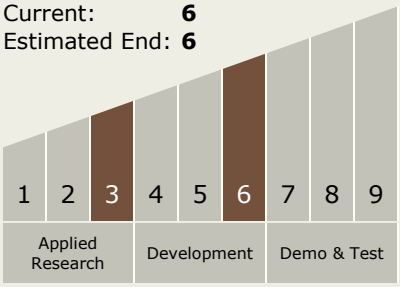
Carlos Torrez

Principal Investigator:

Elena S Berman

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.4 Environment Sensors

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System